IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CORTEVA AGRISCIENCE LLC, PIONEER HI-BRED INTERNATIONAL, INC., and AGRIGENETICS, INC., Plaintiffs, v. INARI AGRICULTURE, INC. and INARI AGRICULTURE NV, Defendants.	C.A. No. 23-1059 (JFM)

PLAINTIFFS' OPENING CLAIM CONSTRUCTION BRIEF

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Page(s)

Cases

Other Authorities

I. PRELIMINARY STATEMENT

This case relates to groundbreaking transgenic-plant technology developed by Corteva Agriscience LLC, Pioneer Hi-Bred International, Inc., and Agrigenetics, Inc. (collectively, "Corteva"). Corteva's U.S. Patent Nos. 7,956,246 ("'246 patent"), 8,283,522 ("'522 patent"), 8,575,434 ("'434 patent"), 8,680,363 ("'363 patent"), and 9,695,441 ("'441 patent") (collectively, the "Asserted Patents") relate to its transgenic "events": DAS-59122-7, DAS-44406-6, DP-004114-3, and DAS-81419-2 (covered by the '363 and '441 patents), respectively. These "events" are combinations of genes that confer insect and herbicide resistance to corn and soybean plants. Combined with Corteva's other proprietary genetic material, or "germplasm," they are the foundation of Corteva's Herculex XTRA® (DAS-59122-7) and Qrome® (DP-004114-3) corn products and Corteva's Enlist E3® (DAS-44406-6) and Conkesta E3® (DAS-44406-6 and DAS-81419-2) soybean products.[1] These products reflect billions of dollars—and decades—of Corteva investment. Corteva's events have been fundamental to global agriculture, enabling farmers and consumers to enjoy the benefits of plants that are more productive than their insect- and herbicide-susceptible counterparts.

Inari Agriculture, Inc. and Inari Agriculture NV (collectively, "Inari") seek to use Corteva's events as the "chassis" for their own copycat-seed products. Inari used a third party to purloin seeds containing Corteva's events from a depository and export them to Inari's Belgium facility in a transparent—and now ***admitted***—attempt to evade U.S. law. Inari has always known it needs a license to use Corteva's events—it even engaged in a failed attempt to blackmail Corteva to get one. When Corteva rejected this attempt and notified Inari that its plans to commercialize

[1] Inari has asserted a counterclaim against another patent that Corteva did not assert in this case, U.S. Patent No. 8,901,378 ("'378 patent"), which covers another Corteva corn event, TC-1507, found in other Corteva seed products, including Herculex I®.

Corteva's events violated the law, Inari ignored Corteva's warning. Instead, Inari proceeded to use Corteva's seeds in Belgium to remove small portions of Corteva's events.

Now, in a transparent attempt to conjure noninfringement arguments where it has none, and to pave the way for it to sell its copycat-seed products in the United States, Inari proposes ***nineteen*** of the parties' twenty-one terms for construction, including simple words like "plant" and "seed." Inari seeks to introduce limitations into the claims, create redundancy over limitations already recited, and convince this Court to adopt constructions that are incongruent with the intrinsic evidence. Corteva proposes only two terms for construction to aid the jury's understanding of *Markush* groups.

II. TECHNOLOGY OVERVIEW

Farmers seek to optimize productivity of their land by growing crops that maximize yield. Insects and weeds, however, impede this goal by damaging crops and depleting soil of nutrients. Traditionally, farmers eliminated insects and weeds with chemical pesticides and herbicides, respectively, but those were imperfect solutions. Pesticides did not eliminate the threat of insects, and herbicides, although harmful to weeds, also had the potential to harm productive crops. Corteva and others addressed this problem with transgenic events.

"At the genetic level, an event is part of the genetic makeup of a plant." Ex. B ('434 patent), 10:34-35.[2] Events are created by transforming plant cells with DNA foreign to the plant cells. "'Transformation' refers to the transfer of a nucleic acid fragment [(the foreign DNA)] into the genome of a host organism…." *Id*., 11:17-19. There are many techniques for transforming plant cells, but the general effect of transformation in this case is depicted in **Figure 1**.

[2] All exhibits cited herein are attached to the Declaration of Christopher D. Lynch In Support of Plaintiffs' Opening Claim Construction Brief, filed concurrently herewith.

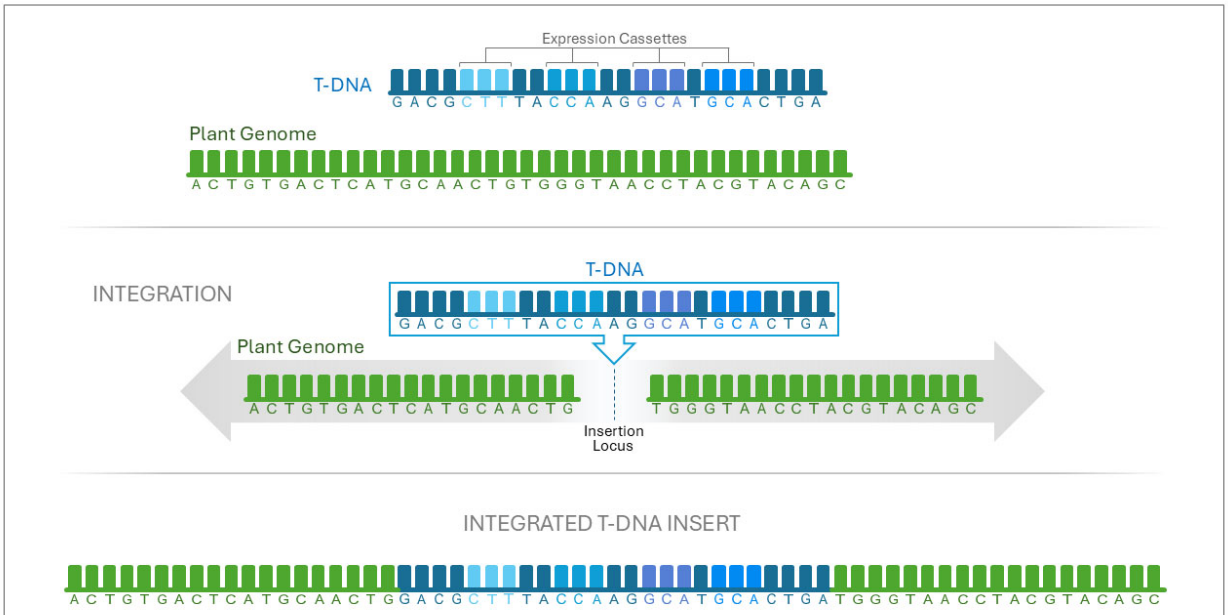

Figure 1

The Transfer-DNA ("T-DNA") includes foreign DNA and may comprise one or more "expression cassettes," which generally refers to a gene and other genetic elements needed for a cell to produce the protein encoded by the gene.[3] The T-DNA integrates into the plant at a particular genomic location, or "locus." Integration splices the plant's genomic DNA such that, after transformation, genomic DNA (green above) flanks both sides of the T-DNA (blue above). Once a T-DNA containing an expression cassette integrates into a plant cell's genome, the plant cell may produce the protein encoded by the expression cassette. If the plant cell makes enough of the protein, and if enough plant cells in a whole plant do the same, then that plant will exhibit beneficial properties, *e.g.*, insect and/or herbicide resistance, as illustrated in **Figure 2**.

[3] T-DNAs and expression cassettes contain hundreds or thousands of nucleotides. Fewer are shown herein for illustration purposes only.

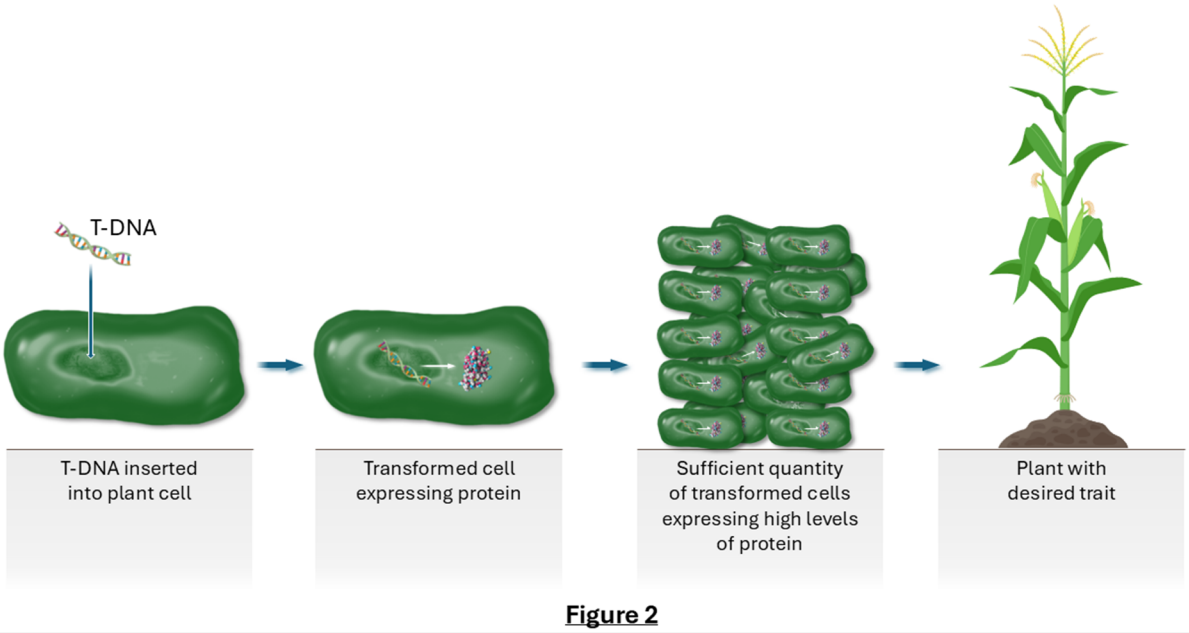

Figure 2

"The expression of foreign genes in plants is known to be influenced by their location in the plant genome." *Id.*, 1:52-53. Thus, the content of the T-DNA (*i.e.*, its expression cassettes) and where it integrated in the genome determine whether the transformed plant will exhibit the desirable traits that result from expression of the foreign proteins encoded by the T-DNA. This is why, to detect whether a plant/seed contains an event, it is not sufficient to detect its T-DNA, but to confirm its location as well. The transformed plants "contain unique junctions between a piece of [foreign] insert DNA and genomic DNA" that "exist[] where insert DNA [*i.e.*, T-DNA] joins flanking DNA." *Id.*, 8:22-27. These junction sequences are unique because they include native genomic DNA connected to foreign DNA; it is extremely unlikely for them to be found in untransformed plants, as shown in **Figure 3**.

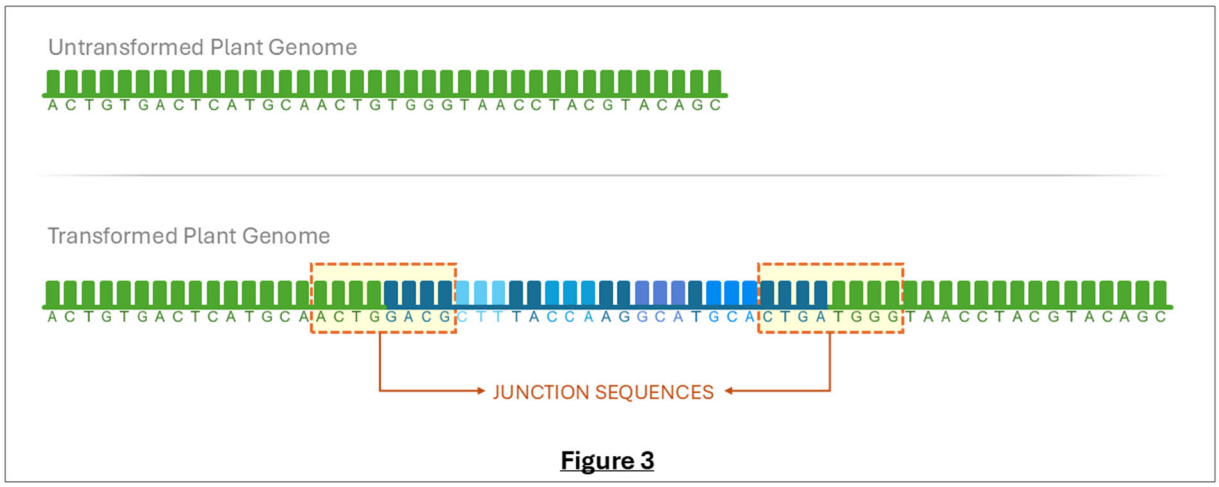

Figure 3

Therefore, to detect a transgenic event in a biological sample, one can simply determine whether the sample contains a junction sequence unique to the event. Doing so confirms the presence of the T-DNA at the genomic location associated with the event.

III. REPRESENTATIVE CLAIMS[4]

A. '246 Patent

1. A corn ***plant*** comprising in its genome a DNA construct ***linked*** to at least one flanking region, ***wherein:***

> ***(a) said flanking region comprises a nucleotide sequence selected from the group consisting of the nucleotide sequence set forth in SEQ ID NO: 19 and the nucleotide sequence set forth in SEQ ID NO: 20***;
>
> (b) said DNA construct comprises a first, a second, and a third expression cassette;
>
> (c) said first expression cassette comprises in operable linkage
>
> > (i) a maize ubiquitin promoter,
> > (ii) a 5′ untranslated exon of a maize ubiquitin gene,
> > (iii) a maize ubiquitin first intron,
> > (iv) a Cry34Abl encoding DNA molecule, and
> > (v) a PinII transcriptional terminator;
>
> (d) said second expression cassette comprises in operable linkage

[4] Terms-to-be-construed are in bold italics, with Inari's in red. Where a term to-be-construed overlaps with another, the overlap is underlined.

(vi) a wheat peroxidase promoter,
(vii) a Cry35Abl encoding DNA molecule, and
(viii) a PinII transcriptional terminator; and

(e) said third expression cassette comprises in operable linkage

(ix) a cauliflower mosaic virus (CaMV) 35S promoter;
(x) a pat encoding DNA molecule; and
(xi) a 3′ transcriptional terminator from CaMV 35S.

3. The ***plant*** of claim 1, wherein said DNA construct is ***linked*** to a first and a second flanking region.

4. The ***plant*** of claim 3, wherein said first flanking region comprises the nucleotide sequence set forth in SEQ ID NO: 19 and said second flanking region comprises the nucleotide sequence set forth in SEQ ID NO: 20.

12. A ***seed*** comprising in its genome the nucleotide sequence set forth in SEQ ID NO: 23.

B. ’522 Patent

1. A plant cell comprising ***a polynucleotide that encodes a protein having aryloxyalkanoate dioxygenase activity***, wherein said protein has at least 95% amino acid sequence identity with a sequence selected from the group consisting of SEQ ID NO:2 and SEQ ID NO:4.

3. A method of controlling weeds in a crop field, said method comprising applying an aryloxyalkanoate herbicide to said crop field, said crop field comprising a plurality of plants, each said plant comprising a plurality of plant cells of claim 1, wherein expression of said polynucleotide renders said plant resistant or tolerant to said aryloxyalkanoate herbicide.

8. The method of claim 3 wherein said method further comprises applying said aryloxyalkanoate herbicide to said crop field after seeds are planted in said field but prior to emergence of said plants grown from said seeds.

13. A ***seed*** comprising a plant cell of claim 1.

C. ’434 Patent

1. A ***DNA construct*** comprising: a first, second, third and fourth expression cassette,

wherein said first expression cassette in operable linkage comprises:
(a) a maize ubiquitin promoter;
(b) a 5′ untranslated exon of a maize ubiquitin gene;
(c) a maize ubiquitin first intron;
(d) a Cry1F encoding DNA molecule; and

(e) a poly(A) addition signal from ORF 25 terminator;

said second expression cassette in operable linkage comprises:
(1) a maize ubiquitin promoter;
(2) a 5′ untranslated exon of a maize ubiquitin gene;
(3) a maize ubiquitin first intron;
(4) a Cry34Ab1 encoding DNA molecule; and
(5) a PinII transcriptional terminator;

said third expression cassette in operable linkage comprises;
(i) a wheat peroxidase promoter;
(ii) a Cry35Ab1 encoding DNA molecule; and
(iii) a PinII transcriptional terminator; and

said fourth expression cassette in operable linkage comprises;
(a) a CaMV 35S promoter;
(b) a pat encoding DNA molecule; and
(c) a 3′ transcriptional terminator from CaMV 35S;

wherein the four cassettes are ***flanked by*** SEQ ID NO: 27 at the 5′ end and SEQ ID NO: 28 at the 3′ end.

4. A ***plant*** comprising the sequence set forth in SEQ ID NO: 6.

5. A corn ***plant*** comprising the ***genotype of the corn event DP-004114-3*** deposited with American Type Culture Collection (ATCC) under Accession No. PTA-11506, wherein said genotype comprises the ***DNA construct*** of claim 1.

6. A corn ***plant*** comprising the ***genotype of the corn event DP-004114-3***, wherein a representative sample of ***seed*** of said corn event has been deposited with American Type Culture Collection (ATCC) with Accession No. PTA-11506.

8. A ***seed*** comprising ***corn event DP-004114-3***, wherein said ***seed*** comprises the ***DNA construct*** of claim 1, wherein a representative sample of ***corn event DP-004114-3 seed*** has been deposited with American Type Culture Collection (ATCC) with Accession No. PTA-11506.

9. A corn ***plant***, or part thereof, grown from the ***seed*** of claim 8.

14. A biological sample ***derived from*** corn event DP-004114-3 ***plant***, tissue, or ***seed***, ***wherein said sample comprises a nucleotide sequence selected from the group consisting of SEQ ID NO: 27 and SEQ ID NO: 28, or the complement thereof***, wherein said nucleotide sequence is detectable in said sample using a nucleic acid amplification or nucleic acid hybridization method, wherein a representative sample of said corn event DP-004114-3 seed has been deposited with American Type Culture Collection (ATCC) with Accession No. PTA-11506.

15. The biological sample of claim 14, wherein said biological sample comprise ***plant***, tissue, or ***seed*** of transgenic corn event DP-004114-3.

16. The biological sample of claim 15, wherein said biological sample is a DNA sample extracted from the transgenic corn ***plant*** event DP-004114-3, and wherein said DNA sample comprises one or more of the nucleotide sequences selected from the group consisting of SEQ ID NO: 27, SEQ ID NO: 28, and the complement thereof.

21. A method of producing hybrid corn seeds comprising:

(a) planting seeds of a first inbred corn line comprising the ***DNA construct*** of claim 1 and seeds of a second inbred line having a genotype different from the first inbred corn line;
(b) cultivating corn plants resulting from said planting until time of flowering;
(c) emasculating said flowers of plants of one of the corn inbred lines;
(d) sexually crossing the two different inbred lines with each other; and
(e) harvesting the hybrid seed produced thereby.

25. The method of claim 21 further comprising backcrossing the second generation progeny ***plant*** of step (d) that comprises ***corn event DP-004114-3*** DNA, deposited under Accession No. PTA-11506 with American Type Culture Collection (ATCC), to the parent ***plant*** that lacks the ***corn event DP-004114-3*** DNA, thereby producing a backcross progeny ***plant*** that is resistant to at least western corn rootworm.

D. ’363 Patent

7. A soybean ***plant***, wherein representative seed of said soybean ***plant*** has been deposited with the American Type Culture Collection under Accession No. PTA-12006.

8. A ***seed*** or a part of the ***plant*** of claim 7, wherein said ***seed*** or part comprises SEQ ID NO:14.

9. A soybean ***plant***, or part thereof, comprising the DNA sequence of SEQ ID NO: 14.

E. ’441 Patent

1. A polynucleotide comprising SEQ ID NO: 14.

2. A soybean ***plant***, ***seed***, or other part of said ***plant*** comprising the polynucleotide of claim 1.

F. ’378 Patent

1. A corn plant comprising a DNA construct, said DNA construct comprising a first and a second expression cassette,

wherein said first expression cassette in operable linkage comprises
(a) a maize ubiquitin promoter;
(b) a 5′ untranslated exon of a maize ubiquitin gene;
(c) a maize ubiquitin intron;
(d) a Cry1F encoding DNA molecule; and
(e) a 3′ ORF25 transcriptional terminator;

and said second expression cassette comprising in operable linkage
(i) a CaMV 35S promoter;
(ii) a pat encoding DNA molecule; and
(iii) a 3′ transcriptional terminator from (CaMV) 35S comprising the nucleic acid sequence of positions 5843 to 6032 of SEQ ID NO: 25;

and wherein the first and second expression cassettes are ***flanked by*** SEQ ID NO: 26 at the 5′ end and SEQ ID NO: 27 at the 3′ end.

IV. DISPUTED TERMS

A. "DNA construct" ('434 patent, cls. 1-2, 5, 8)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning, which is assembly of DNA molecules linked together	A DNA construct comprising the first, second, third, and fourth expression cassettes (recited in claim 1) flanked by SEQ ID NO: 27 on the 5' end and SEQ ID NO: 28 on the 3' end.

The specification states that "[a] DNA construct is an assembly of DNA molecules linked together that provide one or more expression cassettes." Ex. B ('434 patent), 9:40-41. Corteva's construction mimics that definition but removes "that provide one or more expression cassettes" to avoid injecting redundancy because the claim body expressly recites multiple expression cassettes.

Inari's construction fails for at least two reasons. First, it repeats "DNA construct" without explaining what a "DNA construct" is. Second, it impermissibly incorporates the expression-cassette and SEQ-ID limitations from the claim body to the preamble, rendering those limitations redundant. *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016) ("Construing a claim term to include features of that term already recited in the claims would make those expressly recited features redundant.").

B. "corn event DP-004114-3" ('434 patent, cls. 5-6, 8, 14-15)

Corteva's Construction	Inari's Construction
"a Cry1F-encoding expression cassette, a Cry34Ab1-encoding expression cassette, a Cry35Ab1-encoding expression cassette, and a pat-encoding expression cassette, located between SEQ ID NO: 27 at the 5' end and SEQ ID NO: 28 at the 3' end"	The complete sequence of the insert and flanking regions of event DP-004114-3, as disclosed in SEQ ID NO: 6, which includes the four cassettes disclosed in Claim 1 flanked by SEQ ID NO: 27 at the 5' end and SEQ ID NO: 28 at the 3' end.

The parties agree that "corn event DP-004114-3" includes the expression cassettes recited in claim 1 (blue in **Figure 4**) and the junction sequences SEQ IDs 27-28 (dotted-line boxes) that adjoin them.

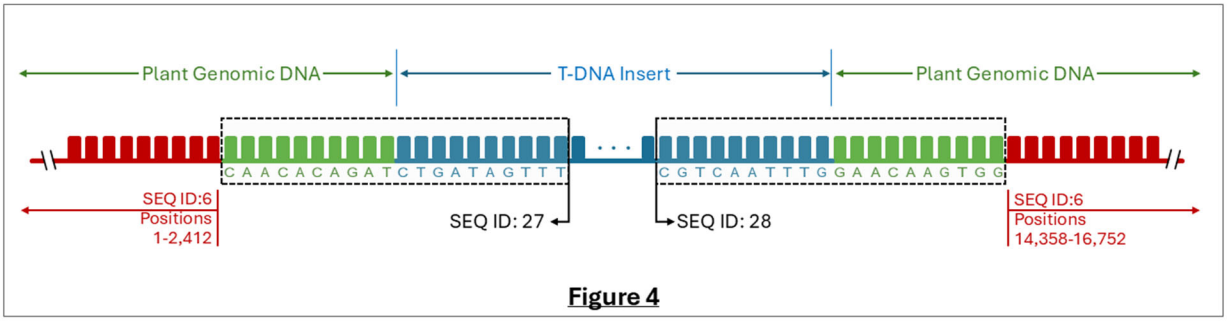

Figure 4

SEQ ID:6, however, includes an additional 4,807 nucleotides at positions 1-2,412 and 14,358-16,752 (red). The parties dispute whether these additional nucleotides of SEQ ID:6 are part of "DP-004114-3."

Initially, Inari's construction seeks to import a limitation into the claims—"one of the cardinal sins of patent law." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1320 (Fed. Cir. 2005). "[C]orn event DP-004114-3" and SEQ ID:6 are distinct limitations. Some claims recite SEQ ID:6 (cls. 4, 12), others recite "corn event DP-004114-3" (*e.g.*, cls. 5-6, 8, 14-15), and one recites both (cl. 26). But claims 5-6, 8, and 14-15 only recite "corn event DP-004114-3," not SEQ ID:6. Inari is attempting to import SEQ ID:6 into all these claims, which should be rejected. *Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1325 (Fed. Cir. 2003) ("The danger of improperly

importing a limitation is even greater when the purported limitation is based upon a term not appearing in the claim.").

Corteva's construction, on the other hand, tracks the Applicant and Examiner's shared view of DP-004114-3. *Saffran v. Johnson & Johnson*, 712 F.3d 549, 559-61 (Fed. Cir. 2013) (construing a term consistent with the examiner and applicant's shared view of the claimed invention). During prosecution, the Examiner stated:

> The following is a statement of reasons for the indication of allowable subject matter: The ***corn event DP-004114-3*** is not known in the prior art. The ***event is described as*** a DNA construct comprising ***four operably linked cassettes*** comprising three Cry toxins and a phosphinothricin resistance gene, wherein the construct is ***flanked SEQ ID NO: 27 and 28*** (20mers) in a corn plant.

Ex. H (Feb. 4, 2013 Non-Final Office Action) at 11.[5] The Applicant acquiesced to this understanding and used it to distinguish its invention over the prior art:

> The Action states that Claim 15 is allowable and acknowledges the ***corn event DP-004114-3*** is not known in the prior art where the ***event is described as*** a DNA construct comprising ***four operably linked cassettes*** comprising three Cry toxins and a phosphinothricin resistance gene, wherein the construct is ***flanked by SEQ ID NO: 27 and 28***.

Ex. I (May 2, 2013 Response to Non-Final Office Action) at 15. Neither the Applicant nor the Examiner understood DP-004114-3 to mean SEQ ID:6. Rather, both interpreted the event to be SEQ IDs:27-28 and the DNA between them, nothing more.

[5] All emphasis added unless otherwise noted.

C. "the genotype of the corn event DP-004114-3" ('434 patent, cls. 5-6)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning, which is the genetic constitution of the corn event DP-004114-3	The complete sequence of the insert and flanking regions of event DP-004114-3, as claimed in claim 1 and as disclosed in SEQ ID NO: 6, which includes the four cassettes disclosed in Claim 1 flanked by SEQ ID NO: 27 at the 5' end and SEQ ID NO: 28 at the 3' end.

The patent does not define "genotype," but it cites a textbook that does. *V-Formation, Inc. v. Benetton Grp. SpA*, 401 F.3d 1307, 1311 (Fed. Cir. 2005) ("prior art cited in a patent . . . constitutes intrinsic evidence."). The patent states that "[d]efinitions of common terms in molecular biology may also be found in Rieger et al., *Glossary of Genetics: Classical and Molecular, 5th edition*…[("Rieger")]." Ex. B ('434 patent), 5:65-67. Rieger defines "genotype" as "[t]he genetic constitution in respect to the alleles at one or a few pairs of genetic loci under observation." Ex. K (Rieger) at 230. As discussed above, corn event DP-004114-3 is a transgenic event found at a specific location or "locus" in the corn genome. Thus, "the genotype of the corn event DP-004114-3" is "the genetic constitution of corn event DP-004114-3." If the Court believes it helpful to a jury, Corteva is amenable to incorporating the construction of "corn event DP-004114-3" in Section IV.B into its construction of this term as well.

Inari's construction of "the genotype of the corn event DP-004114-3" is practically identical to its flawed construction of "corn event DP-004114-3," and should be rejected for the reasons discussed in Section IV.B.

D. "flanked by" ('434 patent, cl. 1; '378 patent, cl. 1)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning, which is joined or connected at the side to	Adjacent to

Although the specification does not define "flanked by," it is an easily understood term that does not require construction. Webster's Dictionary defines "flank" to mean "to stand or be situated ***at the side of***." Ex. AA at 864.[6] That Corteva's construction further requires a physical connection simply reflects the reality that DNA that is "flanked by" two sequences is joined or connected to those sequences by a chemical bond.

The plain meaning of "flanked by" comports with the specification. First, the patents demonstrate that DNA flanking a T-DNA insert is joined to the inserted DNA. Ex. B ('434 patent), 8:26-27 ("a junction exists where insert DNA ***joins*** flanking DNA."), 8:25-26 ("[a] 'junction' is a point where two (2) specific DNA fragments ***join***."); Ex. G ('378 patent), 7:40-43 (same). Second, the patents show that flanking DNA is at the side of the insert. Ex. B ('434 patent), 16:45-46 ("primer pairs can be derived from flanking sequence ***on both sides*** of the inserted DNA"); Ex. G ('378 patent), 15:63-64 (same). The specifications thus support Corteva's construction, which explains both the physical connection ("joined or connected") between inserted DNA and DNA it is "flanked by" and how they are situated with respect to each other ("at the side to").

The Court should not adopt Inari's construction for at least two reasons. First, the specification describes "flanking DNA" as "immediately adjacent to" or "adjacent to" inserted DNA, or with no location requirement at all. Ex. B ('434 patent), 2:35-36 ("flanking DNA adjacent to the inserted" DNA), 10:42-43 ("flanking sequence immediately adjacent to the inserted DNA"),

[6] Corteva provides definitions from Webster's Dictionary for many disputed terms. Definitions from other dictionaries cited herein are consistent with those from Webster's and are more jury-friendly and/or more coherent in the context of the claims.

10:38-39 (discussing "the inserted DNA and flanking DNA"). Inari's construction attempts to narrow the claims by requiring that a flanking sequence is ***always*** adjacent to inserted DNA. Second, the specification uses "adjacent" and "flanking" together to describe DNA sequences (*id*., 17:9-10 ("adjacent flanking DNA sequence")), which would be unnecessary if "flanking" ***always*** means "adjacent."

E. "derived from" ('434 patent, cl. 14)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning, which is formed or developed out of	Extracted or processed from.

The specification does not define "derived from," but its plain and ordinary meaning is evident. For example, Webster's Dictionary defines "derived" to mean "***formed or developed out of*** something else." Ex. BB at 608.

This is consistent with the specification, which uses "derived from" in at least three contexts, all of which are encompassed by Corteva's construction. First, the patent uses the term to explain that "food or feed products (fresh or processed)" can be "***derived from*** plant material." Ex. B ('434 patent), 5:8-9. Second, it also uses the term to explain that certain plants of the invention can be made via transformation. *Id*. 10:50-61 (discussing "corn plant and progeny thereof ***derived from*** transformation with the expression cassettes of the embodiments of the present invention that confers insect resistance"). Third, the patent uses the term in connection with seeds and the plants, plant cells, and seeds formed or developed from them. *Id*. 6:34-36 ("Compositions of this disclosure include seed deposited as Patent Deposit No. PTA-11506 and plants, plant cells, and seed ***derived therefrom***.").

By contrast, Inari's narrow "extracted or processed from" construction excludes the second and third usages of "derived from." Regarding the second usage, it is nonsensical to say a corn plant and progeny thereof are "extracted or processed" from transformation. Transformation is a

technique for genetically modifying cells, not extraction or processing. Section II *supra*. Similarly, for the third usage, one would not describe plants as something that is "extracted or processed" from a seed. Indeed, "[v]aried use of a disputed term in the written description demonstrates the breadth of the term rather than providing a limited definition." *Johnson Worldwide Associates, Inc. v. Zebco Corp.*, 175 F.3d 985, 991 (Fed. Cir. 1999).

F. "wherein said sample comprises a nucleotide sequence selected from the group consisting of SEQ ID NO: 27 and SEQ ID NO: 28, or the complement thereof" ('434 patent, cl. 14)

Corteva's Construction	Inari's Construction
This language should be interpreted as a Markush group, which is "wherein said sample comprises a nucleotide sequence comprising any of: SEQ ID NO: 27, the complement of SEQ ID NO: 27, SEQ ID NO: 28, or the complement of SEQ ID NO: 28"	Plain and ordinary meaning, which is "wherein the sample comprises in its DNA a nucleotide sequence selected from the group consisting of SEQ ID NO: 27, or the complement thereof, located at the 3' end of the insert and SEQ ID NO: 28, or the complement thereof, located at the 5' end of the insert."

Corteva's construction clarifies the scope of the disputed term, which is written using *Markush* language that—absent construction—would be confusing to the jury. Inari's construction, in contrast, improperly adds limitations not recited in the claims and will be hopelessly confusing to the jury.

"A Markush claim…lists alternative species or elements that can be selected as part of the claimed invention." *Multilayer Stretch Cling Film Holdings, Inc. v. Berry Plastics Corp.*, 831 F.3d 1350, 1357 (Fed. Cir. 2016). The alternative species are typically listed in the form "a member selected from the group consisting of A, B, and C." *Id*. The disputed term plainly employs *Markush* structure: rather than "a member," the disputed term recites "a nucleotide sequence" followed by "selected from the group consisting of," "SEQ ID NO:27 and SEQ ID NO:28, or the complement thereof." The effect is that the "biological sample" of claim 14 comprises a nucleotide sequence

that contains ***any*** of SEQ ID:27, its complement, SEQ ID:28, or its complement. Corteva's construction simply translates a patent lawyer's "Markush" language to plain English.

Inari's construction should be rejected for multiple reasons. First, it adds limitations to the claim by specifying that SEQ ID:27 is at the 3', and SEQ ID:28 at the 5', end, even though those locations appear nowhere in the claim. Second, these locations are ***wrong***. The specification teaches the opposite: SEQ ID:27 is at the 5' end and SEQ ID:28 at the 3' end. Ex. B ('434 patent), 8:31-36. What Inari proposes is taught nowhere in the patent and would be inoperative. Third, Inari appears to be attempting to add a requirement that both SEQ IDs 27 and 28 (or their respective complements) are present. But claim 14 permits a selection of any one of the alternatives. This is evident not only from claim 14's use of *Markush* language but also by comparison to dependent claim 16, which states: "wherein said DNA sample comprises ***one or more*** of the nucleotide sequences selected from the group consisting of SEQ ID NO:27, SEQ ID NO:28, and the complement thereof." Given that dependent claim 16 expressly permits only "one" of the sequences to be present, independent claim 14 cannot be construed to be narrower by requiring both. Fourth, because it retains the *Markush* language—which is anything but "plain and ordinary" to a juror—Inari's construction does more to confuse than to clarify.

G. "wherein: (a) said flanking region comprises a nucleotide sequence selected from the group consisting of the nucleotide sequence set forth in SEQ ID NO: 19 and the nucleotide sequence set forth in SEQ ID NO: 20" ('246 patent, cl. 1)

Corteva's Construction	Inari's Construction
This language should be interpreted as a Markush group, which is "wherein (a) said flanking region comprises a nucleotide sequence comprising SEQ ID NO: 19 or SEQ ID NO: 20"	Wherein the nucleotide sequence SEQ ID NO: 19 is linked to and contiguous with the 5' end of the DNA construct and the nucleotide sequence SEQ ID NO: 20 is linked to and contiguous with the 3' end of the DNA construct.

Corteva's construction acknowledges that the disputed term is a *Markush* group that is

satisfied by a flanking region that comprises the nucleotide sequence of SEQ ID:19 ***or*** SEQ ID:20—it does not require both. *Multilayer*, 831 F.3d at 1357.

This is consistent not only with the disputed term's language, but also claims 3-4, which depend from, and thus are narrower than, claim 1. Whereas claim 1 only requires "a DNA construct linked to ***at least one*** flanking region," claim 3 requires the DNA construct to be linked to ***two*** ("linked to a first ***and*** a second flanking region"). Claim 4 depends from claim 3, and further requires that "said first flanking region comprises…SEQ ID NO:19 ***and*** said second flanking region comprises…SEQ ID NO:20".

Inari's construction improperly adds limitations not recited in the claim that require SEQ IDs 19-20 to be "linked to and contiguous with" the DNA construct. It also violates the doctrine of claim differentiation by reading into claim 1 the two-flanking-regions requirement of claim 3 and claim 4's requirement that the flanking regions comprise SEQ ID:19 ***and*** SEQ ID:20. Ex. C ('246 patent), cls. 3-4. But these limitations are the only meaningful differences between independent claim 1 and dependent claims 3-4. Importing them into claim 1 would render claims 3-4 superfluous. *InterDigital Commc'ns, LLC v. Int'l Trade Comm'n*, 690 F.3d 1318, 1324 (Fed. Cir. 2012) ("The doctrine of claim differentiation is at its strongest in this type of case, where the limitation that is sought to be 'read into' an independent claim already appears in a dependent claim.").

H. "linked" ('246 patent, cls. 1, 3)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning, which is joined or connected	Contiguous with.

The patent does not define "linked," and thus Corteva's proposes that the Court construe the term according to its plain and ordinary meaning, which is joined or connected. Webster's

Dictionary defines "link" to mean "to couple or connect by or as if by a connecting element" and "to form a connection or association." Ex. GG at 1317. This is consistent with the claims' use of the term to describe the physical relationship between, for example, the "DNA construct" of claim 1 and the "at least one flanking region" to which it is "linked." They, like all nucleotide sequences, are joined or connected by nucleotides and chemical bonds.

The patent demonstrates that Inari's construction is too narrow. The specification uses the terms "linked" and "operably linked" distinctly, and uses "contiguous" to describe only the latter. The patent states that "'[o]perably linked' means that the nucleic acid sequences being ***linked*** are ***contiguous*** and, where necessary to join two protein coding regions, contiguous and in the same reading frame." Ex. C ('246 patent), 10:8-11. That "operably linked" is defined to mean that the sequences are contiguous strongly implies that sequences that are simply "linked" need not be "contiguous." If "linked" means "contiguous," the patentee would not have needed to clarify that "operably linked" sequences, in addition to "being linked," also "are contiguous." *Acumed LLC v. Stryker Corp.*, 483 F.3d 800, 807 (Fed. Cir. 2007) (rejecting construction of "transverse holes" that required them to be "perpendicular" where the specification taught "a plurality of transverse holes, each of which is…perpendicular…").

Inari's construction of the previous term (Section IV.G) underscores that "linked" does not mean "contiguous with." Inari proposes that the previous term means "[w]herein the nucleotide sequence SEQ ID NO: 19 is ***linked to and contiguous with*** the 5' end of the DNA construct and the nucleotide sequence SEQ ID NO: 20 is ***linked to and contiguous with*** the 3' end of the DNA construct." There is no reason to say "linked" and "contiguous with" if they are synonymous, as Inari claims.

I. "a polynucleotide that encodes a protein having aryloxyalkanoate dioxygenase activity" ('522 patent, cl. 1)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning. A polynucleotide is a polymeric molecule composed of multiple nucleotides. A protein having aryloxyalkanoate dioxygenase activity is a protein with the ability to degrade or diminish the activity of an aryloxyalkanoate herbicide.	Activity capable of degrading phenoxyacetate auxin and pyridyloxyacetate auxin herbicides to confer resistance to a plant to such herbicides.

The parties' dispute appears to center on the meaning of "aryloxyalkanoate dioxygenase activity."[7]

Consistent with the plain and ordinary meaning of the term, the specification states that, "[b]y 'functional activity'…it is meant herein that the proteins/enzymes for use according to the subject invention have ***the ability to degrade or diminish the activity of a[n] herbicide*** (alone or in combination with other proteins)." Ex. D ('522 patent), 13:45-49. Corteva's construction incorporates this definition and clarifies that the herbicide is an aryloxyalkanoate herbicide.

Inari's construction should be rejected for at least two reasons. First, it adds a limitation that the protein "confers ***resistance to a plant***" to two herbicides. Claim 1 is only to a "plant cell," not a whole plant, and does not require herbicide resistance. As shown in **Figure 5**, this is made clear by claim 3 which recites a "plant comprising a plurality of plant cells of claim 1" wherein "expression of [claim 1's] polynucleotide renders said plant resistant or tolerant to said aryloxyalkanoate herbicide."

[7] Inari's construction fails to construe "a polynucleotide that encodes a protein having." Although it does not require construction, for completeness, Corteva provides the plain and ordinary meaning of "polynucleotide," supported by the American Heritage College Dictionary. Ex. CC at 1061 (defining "polynucleotide" as "[a] polymeric compound consisting of a number of nucleotides").

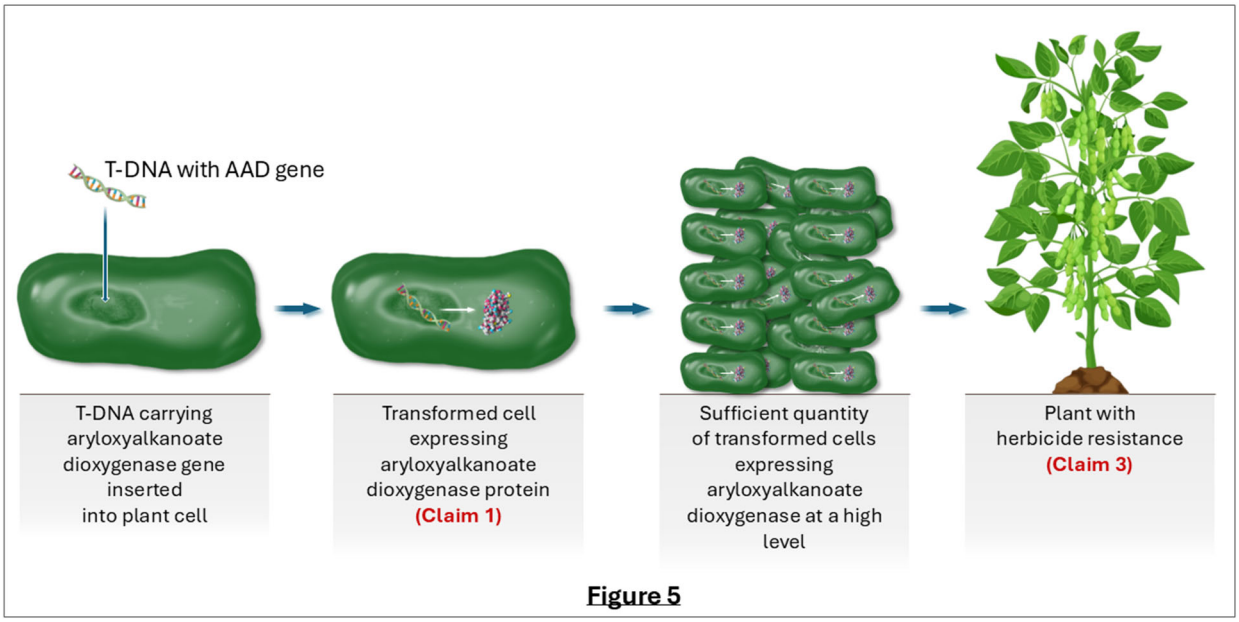

Figure 5

The specification is in accord that one plant cell by itself does not make an entire plant resistant. *Id*., 13:49-54 (describing entire plants preferably producing "an effective amount" of the protein such that "the level of protein expression is sufficient to render the plant completely or partially resistant or tolerant to the herbicide"). Inari's construction thus imposes a functional requirement on the recited polynucleotide that only can be met by a plant.

Second, Inari adds a requirement for resistance to ***two*** herbicides. Nothing in the claims requires this. Even claim 3 references only "***an*** aryloxyalkanoate herbicide." The patentee knew how to specify dual resistance when it desired, as it did in other patents in the same family. *E.g.,* Ex. P, cls. 21-22 ("…a protein having aryloxyalkanoate dioxygenase activity, wherein the protein enzymatically degrades phenoxy auxin ***and*** pyridyloxy auxin herbicides…"); Ex. Q, cl. 1 ("…an AAD-12 protein that exhibits aryloxyalkanoate dioxygenase activity wherein said activity enzymatically degrades a phenoxy auxin herbicide ***and*** a pyridyloxy auxin herbicide"); *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1316 (Fed. Cir. 2015) ("Where multiple patents derive from the same parent application and share many common terms, we must interpret the claims

consistently across all asserted patents."). The patentee chose not to use that dual-resistance language in the '522 patent claims, demonstrating that the disputed term's construction is broader than what Inari proposes.

J. "plant" / "plants" / "first plant" ('246 patent, cls. 1, 3-4, 6, 8, 10-11; '434 patent, cls. 2-7, 9, 14-15; '363 patent, cls. 1, 5-9; '441 patent, cl. 2)

Asserted Patent	Corteva's Construction	Inari's Construction
"plant"		
'246/'434/'363/'441 patents	Plain and ordinary meaning, which is organism belonging to the kingdom Plantae	An event DAS59122 corn plant
		An event DP-004114-3 plant
		An event DAS81419 soybean plant
		An event DAS81419 soybean plant
"plants"		
'363 patent	Plain and ordinary meaning, which is organisms belonging to the kingdom Plantae	Event DAS81419 soybean plants.
"first plant"		
'363 patent	Plain and ordinary meaning, which is first organism belonging to the kingdom Plantae	An event DAS81419 soybean plant

It speaks volumes that the drafters of the Asserted Patents found it unnecessary to define "plant." The plain and ordinary meaning of "plant" is evident. For example, Webster's Dictionary defines "plant" as "any of numerous organisms constituting the kingdom Plantae." Ex. DD at 1731.

Crucially, none of the Asserted Patents require a "plant" to contain a transgenic event, as dictated by Inari's constructions. To the contrary, all Asserted Patents use "plant" to describe plants that contain an event as well as plants that do not. *E.g.*, Ex. C ('246 patent), 1:15-18; Ex. B ('434 patent), cl. 25, 1:15-18; Ex. E ('363 patent), 5:62-65; Ex. F ('441 patent), 6:1-4; *Johnson*, 175 F.3d at 991 (Fed. Cir. 1999) ("Varied use of a disputed term in the written description demonstrates the breadth of the term rather than providing a limited definition.").

K. "seed" ('246 patent, cls. 6, 8, 12-13; '522 patent, cl. 13; '434 patent, cls. 6, 8-9, 14-15; '363 patent, cls. 7-8; '441 patent, cl. 2)

Corteva's Construction	Inari's Construction
Plain and ordinary meaning, which is ripened ovule of a flowering plant that may develop into a new plant	Plain and ordinary meaning, which is a seed coat, food store, and plant embryo

None of the Asserted Patents define "seed." Thus, Corteva's construction is the plain and ordinary meaning of the term that is consistent with the intrinsic evidence and supported by The Merriam-Webster Dictionary, which defines "seed" as "a ripened ovule of a flowering plant that may develop into a new plant." Ex. EE at 652. This is consistent with the definition from a technical dictionary, "Dictionary of Botany," which defines "seed" as "[t]he structure that develops from the fertilized ovule in seed plants." Ex. FF at 324.

The intrinsic evidence is in accord, demonstrating that corn and soybean plants are "flowering plants." *E.g.*, Ex. B ('434 patent), cl. 21 ("cultivating corn plans resulting from said planting until time of flowering"); Ex. E ('363 patent), 4:12 (listing "flowers" as soybean plant parts). It also supports that an "ovule" is a part of a plant. *E.g.*, Ex. C ('246 patent), 6:43-45. The intrinsic evidence also confirms that a "seed" "may develop into a new plant." *E.g.*, Ex. D ('522 patent), cl. 8 ("plants grown from said seeds"); Ex. B ('434 patent), cl. 9 ("A corn plant, or part thereof, grown from the seed of claim 8."); *id.*, 27:29-32 ("plants grown at the DuPont Experimental Station (Wilmington, Del.) from seed obtained from Pioneer Hi-Bred (Johnston, Iowa).").

By contrast, Inari cites no intrinsic evidence in support of its construction in the parties' Joint Claim Construction Chart. *E.g.*, Ex. A at 35.

V. CONCLUSION

Corteva respectfully requests the Court adopt its proposed constructions.

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CERTIFICATE OF COMPLIANCE

The undersigned certifies that Plaintiffs' Opening Claim Construction Brief complies with the type-volume limitations pursuant to the Scheduling Order at D.I. 49 because said Brief contains 4,955 words, excluding those parts noted in the Scheduling Order. The Brief was prepared using Microsoft Word for Microsoft 365.

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